

REMARKS

Favorable reconsideration and allowance of this application are requested.

**1. Discussion of Claim Amendments**

The election of the claims of Group I (including claims 1-12) for prosecution here is affirmed. By way of the amendment instructions above, claims 13-18 directed to patentably distinct inventions non-elected for prosecution have been cancelled without prejudice to the applicants' rights under 35 USC §121.

By way of the amendment instructions above, claim 1 has been amended so as to emphasize that the print layer is arranged between film 1 and film 2 and that the print layer is printed directly onto film 1 or film 2. Support for such amendment can be found in the specification at page 5, line 43 through page 6, line 2. Claim 2 has been cancelled as redundant.

Claim 1 also has been revised so as to emphasize that the packaging printing ink comprises at least one solvent or a mixture of different solvents, selected from the group consisting of alcohols, substituted alcohols and esters, at least a hyperbranched polyester containing functional groups selected from the group consisting of OH, COOH and COOR groups, and optionally additives. Support for such amendment may be found at page 13, lines 24-39 and page 14, lines 5-23 of the specification.

Claims 19-29 are new and are directed to a method of making a multilayer material for producing packaging. Claims 19-29 are method analogues of pending claims 1 and 3-12. As such, applicants suggest that such method claims 19-29 are properly examined with claims 1-12 elected for prosecution herein. However, in the event the Examiner deems new claims 19-29 to be patentably distinct as compared to the elected claims of 1-12, then applicants request withdrawal of such new claims 19-29 without prejudice to the filing of a divisional application pursuant to 35 USC §121.

Following entry of the present amendment, therefore, claims 1, 3-12 and 19-29 will therefore be pending herein for which favorable action on the merits is requested.

## **2. Response to Claim Objections**

The amendments to the claims to replace "film 1" with "first film" and "film 2" with "second film" terminology are believed to address the Examiner's objection with respect to reference characters being present in the claims. By way of clarification, the numerals 1 and 2 were not in fact "reference numerals" corresponding to any drawings since no drawings were filed and were not required to be filed in order to provide an understanding of the invention. As such, the amendments merely changed the nomenclature used to name the two films employed in the multilayer laminate.

The acronyms PET and PEN have been supplemented with the polymer names polyethylene terephthalate and polyethylene naphthalate, respectively, in claim 5.

Applicants are however confused by the Examiner's requirement that words be employed instead of COOH, OH, COOR and KOH. These are chemical *formulas* – not acronyms. An acronym is by definition a word formed from the initial letter of a series of words, e.g., USPTO is an acronym for the United States Patent and Trademark Office. The objected-to terms are actually chemical formulas of well known meaning. Thus, as is notoriously well known by even persons of less than ordinary skill in the chemical arts, COOH is a carboxyl group, OH is a hydroxyl group, COOR is an ester group and KOH is potassium hydroxide. Withdrawal of this objection is therefore in order.

## **3. Response to 35 USC §112 Issues**

### **A. Response to Issues Raised under 35 USC §112, ¶1**

The Examiner asserts that the claims are nonenabled by the original disclosure by virtue of their recitation of an acid number (KOH value) and OH number. Applicants respectfully disagree.

Specifically, applicants note that an "acid number" and an "OH number" are known by anyone skilled in the art. Moreover, such a skilled person would know how to obtain such polymer characterizations. In this regard, the "acid number" is commonly used in order to characterize polyesters, oils and waxes in terms of their content of free carboxylic groups. The acid number is characterized by titration using KOH solution and its value is the amount of KOH, in mg/g of the polyester needed to neutralize such free carboxylic groups. Similarly, the OH-number defines a polyester in terms of free OH groups which is determined by reacting the polyester with acetic acid anhydride and titrating back the amount of free acidic acid produced by the reaction of the free OH groups with the acetic anhydride. The OH number gives the amount of KOH needed in order to neutralize the free acetic acid.

In this regard, the Examiner's attention is directed to the definition of acid number at [http://en.wikipedia.org/wiki/Acid\\_value](http://en.wikipedia.org/wiki/Acid_value). Furthermore, USP 4,503,216 (see [http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=H1OFF&d=PALL&p=1&u=%2Fnetacgi%2FPTO%2Fsrc\\_hnum.htm&r=1&f=G&l=50&s1=4503216.PN.&OS=PN/4503216&RS=PN/4503216](http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=H1OFF&d=PALL&p=1&u=%2Fnetacgi%2FPTO%2Fsrc_hnum.htm&r=1&f=G&l=50&s1=4503216.PN.&OS=PN/4503216&RS=PN/4503216)) indicates at column 4, lines 51-54 that acid number and OH number determinations may be made by standard ASTM measurements (ASTM D-2849).

Since the acid number and the OH number are parameters commonly used in the art to characterize polyester or polyester polyols, no definition of such well known parameters is needed in the specification. The acid number and OH number are analogous to a definition for the weight average molecular weight " $M_w$ " and the number average molecular weight " $M_n$ " or its ratio " $M_w/M_n$ ", which are also commonly known fundamental parameters in order to characterize polymers and commonly known to the skilled person. Such definitions of molecular weight likewise need not be provided in an applicant's specification due to the notorious knowledge of the same in the art. The same is true for acid number and OH number characterizations.

The Examiner states that:

"It appears since KOH is claimed, then at least the solvent KOH should be used in the examples to yield a KOH number/value. Since the KOH is not used, nor the -COOH or -OH groups, it begs the question how one produces a KOH value as claimed." Official Action at page 4, lines 10-12.

Such a statement evidences that the Examiner is totally unfamiliar with the characterization of polyesters in terms of acid values and OH values, each of which is expressed in mg KOH/g (of the polyester). However, the Examiner's lack of understanding in this respect does not then translate into statutorily non-enabled subject matter.

The Examiner continues that:

"An acid or source for the -OH is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure." Official Action at page 4, lines 13-15.

Applicants quite frankly do not understand the Examiner's problem. Of course, the polyester is by definition the reaction product of a polycarboxylic acid, containing COOH groups, and a polyol, containing OH groups. Furthermore, claim 1 expressly states that the polyester contains functional groups selected from the group consisting of OH, COOH and COOR groups.

Thus, it appears that the lack of technical understanding pertaining to acid and OH numbers has caused the rejections to be advanced under 35 USC §112, first paragraph. As has been described above, however, the specification is entirely

enabling to the claimed subject matter. Indeed, the Examiner's citation to *in re Mayhew* is misplaced. Continued rejection of the claims on this basis would therefore amount to clear reversible error. Withdrawal of the same is therefore in order.

#### **B. Response to Issues Raised under 35 USC §112, ¶2**

The amendments above to the claims are believed to address fully the Examiner's objections under 35 USC §112, second paragraph. To the extent that some of the rejections are based on the misunderstanding with regard to the claimed acid number, then the comments above are believed to remedy such rejections also.

With regard to the rejections advanced against claims 8-9, it is noted that such layers may be positioned anywhere in the stack that is deemed desirable. Hence, the claims are entirely definite by virtue of the recitation of the multilayer material being "comprised of" such layers.

Withdrawal of all rejections advanced under 35 USC §112, second paragraph is therefore in order.

#### **4. Response to Double Patenting Issues**

Claims 1-12 have attracted an "obviousness type" double patenting rejection based on claims 1-12 of co-pending and commonly owned U.S. Application Serial 10/510,747 ("the copending '747 application") in view of Anderson et al (USP 6,316,538). Applicants emphatically disagree with the Examiner's reasoning on this issue.

Specifically, it should be noted that the subject matter of the claims of the present application is completely different from the subject matter of the claims of the copending '747 application. In this regard, the claims of the subject application are directed to a multilayer material comprising a print layer containing a hyperbranched **polyester** having functional groups selected from OH, COOH and COOR as binder, whereas the

co-pending '747 application is directed to a multilayer material comprising a print layer containing hyperbranched **polyurea** having functional groups selected from *amino*, OH, and *blocked isocyanate groups*. Polyesters and polyureas are completely different chemical entities. The subject matter of claim 1 of the instant application does not obviously embrace the subject matter of the claims of the co-pending '747 application, and vice versa.

With regard to Anderson et al, there seems to be some confusion between "polyurethanes" on the one hand and "polyureas" on the other hand. In this regard, polyureas are most certainly *not* polyurethanes, the former containing the urea group ('NH-C(O)-NH-), and the latter containing the urethane group (-NH-C(O)-O-). No reference is made at all in Anderson et al to hyperbranched **ureas**, but instead only **polyurethanes** are mentioned. Thus, Anderson et al does not establish obviousness at all of hyperbranched polyesters on the one hand and hyperbranched polyureas on the other hand.

Withdrawal of the rejection advanced under the doctrine of obviousness-type double patenting is therefore in order.

## 5. Response to Art-Based Issues

### A. Response to Rejection Based on Kaczun et al and Kajimaru et al

Prior claims 1-12 attracted a rejection under 35 USC 103(a) as allegedly being unpatentable over Kaczun et al (WO 97/38849) in view of Kajimaru et al. (US 6,818,699). Applicants suggest that neither Kaczun et al nor Kajimaru et al is appropriate as a reference against the presently pending claims.

Kaczun et al teaches a multilayer material comprising a perfume barrier layer consisting of a one component lacquer. According to page 5, 3rd paragraph of Kaczun

et al the one component lacquer is based on a polyester resin. Kaczun et al only mentions linear aromatic polyesters solubilized in an ester solvent, like ethyl acetate.

Kajimaru et al is directed to aqueous dispersion of polyester resin, used as aqueous coating compositions. However, the instant print layer, as well as the perfume barrier layer of Kaczun et al, is an **organic solvent based** layer. See claim 1, which defines only organic solvents (alcohols, substituted alcohols and esters). There is no hint whatsoever in either Kaczun et al or Kajimaru et al to include the polyesters of Kajimaru et al as part of water-based aqueous coating composition, into the organic solvent based barrier layer of Kaczun et al. Therefore, the present invention is patentably unobvious over a combination of Kaczun et al. and Kajimaru et al.

**B. Response to Rejection Based on Kaczun et al, Kajimaru et al and Pfeiffer et al**

Claim 5 attracted a separate rejection under 35 USC §103(a) as allegedly being unpatentable over Kaczun et al in view of Kajimaru et al and further in view of Pfeiffer et al. In this regard, the Examiner asserts that the disclosure of PET and PEN in Pfeiffer et al renders "obvious" the subject matter of claim 5. However, Pfeiffer et al does not cure the deficiencies of Kaczun et al and Kajimaru et al as described above. As such, withdrawal of the rejection advanced separately against claim 5 is in order.

**C. Response to Rejections Based on Kaczun et al in view of Kajimaru et al and Anderson et al**

Claims 10-11 attracted a rejection under 35 USC §103(a) based on the Kaczun et al in view of Kajimaru et al and further in view of Anderson et al. The inappropriateness of Kaczun et al and Kajimaru has already been discussed previously. Such inappropriateness is not cured by the further combination with Anderson et al.

In this regard, Anderson et al is likewise related to aqueous dispersions for use as or in overprint varnishes, inks, pigment dispersions, adhesives, coating and the like. There is no hint whatsoever in Anderson et al either to include the polymers taught by

Anderson as part of aqueous polymeric dispersions into the solvent based barrier layer of Kaczun et al. Therefore, the present invention as defined by the pending claims is also patentably unobvious over the combination of Kaczun et al., in view of Kijaimaru and Anderson et al.

**D. Response to Rejections Based on Kaczun et al in view of Anderson et al**

Claims 1-12 also attracted a rejection under 35 USC §103(a) as being unpatentable over Kaczun et al. in view of Anderson et al. (US 6,316,538).

As noted previously, Anderson et al relates to *aqueous* dispersions for use as or in overprint varnishes, inks, pigment dispersions, adhesives, coatings and the like. There is no hint whatsoever in Anderson et al. either to include the polymers taught by Anderson et al. as components of *aqueous* polymer dispersions into the organic solvent-based perfume barrier layer of Kaczun et al. Therefore, the present invention as defined by claims 1-12 is also patentably unobvious over the combination of Kaczun et al. and Anderson et al.

**E. Response to Rejection Based on Kaczun et al and Pfeiffer et al**

Claim 5 attracted a separate rejection under 35 USC §103(a) as allegedly being unpatentable over Kaczun et al in view of Peiffer et al. In this regard, the Examiner asserts that the disclosure of PET and PEN in Peiffer et al renders "obvious" the subject matter of claim 5. However, Peiffer et al does not cure the deficiencies of Kaczun et al as described above. As such, withdrawal of the rejection advanced separately against claim 5 is in order.

**5. Conclusion**

Every effort has been made to advance prosecution of this application to allowance. Therefore, in view of the amendments and remarks above, applicant

suggests that all claims are in condition for allowance and Official Notice of the same is solicited.

Should any small matters remain outstanding, the Examiner is encouraged to telephone the Applicants' undersigned attorney so that the same may be resolved without the need for an additional written action and reply.

An early and favorable reply on the merits is awaited.

**6. Fee Authorization**

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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